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## Claims

- Sub A7
1. A method for detecting the presence of a target nucleic acid sequence in a sample, said method comprising
- 5 (a) amplifying said target nucleic acid so that the product of the amplification reaction includes a purine rich region;
- (b) contacting the sample with a peptide nucleic acid able to bind at least a portion of said target sequence; and
- 10 (c) detecting the presence of triplex structures.
2. A method according to claim 1 wherein the peptide nucleic acid is bis-PNA.
- 15 3. A method according to claim 1 or claim 2 wherein the amplification product is exposed to the peptide nucleic acid during or after the amplification reaction.
4. A method according to claim 3 wherein the amplification
- 20 product is exposed to the peptide nucleic acid after completion of the amplification reaction.
5. A method according to any one of the preceding claims wherein the amplification reaction is a polymerase chain
- 25 reaction.
- Sub A8
6. A method according to any one of the preceding claims wherein the target nucleic acid contains a purine rich region.
- 30 7. A method according to any one of claims 1 to 5 wherein a purine rich region is introduced into the amplification product during the amplification reaction.
- Sub A9
- 35 8. A method according to claim 7 wherein primers used in the amplification comprise a plurality of pyrimidines at the 5' end thereof.

9. A method according to any one of the preceding claims wherein the peptide nucleic acid is immobilised on a support.

10. A method according to claim 9 wherein the support is a waveguide of a detection device.

11. A method according to claim 10 wherein the detection device is a surface plasmon resonance detector.

12. A method according to any one of claims 1 to 8 wherein the triplex structure is detected by a gel retardation method.

13. The use of a primer comprising a sequence which hybridises to an end region of a target nucleic acid sequence, and a plurality of pyrimidine residues at a 5' region thereof; in a method according to any one of the preceding claims.

14. A kit for carrying out a method according to any one of the preceding claims, said kit comprising a peptide nucleic acid sequence which is specific for a target nucleotide sequence, and a primer comprising a sequence which hybridises to an end region of a target nucleic acid sequence, and a plurality of pyrimidine residues at a 5' region thereof.

15. A kit according to claim 14 wherein the peptide nucleic acid is immobilised on a waveguide of an evanescent wave detector apparatus.

16. A kit according to claim 15 wherein the evanescent wave detector apparatus is a surface plasmon resonance detector.

17. A method for detecting a nucleotide sequence according to claim 1, substantially as hereinbefore described.